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# Aligning the Stars: the Colorado Energy Plan

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# Background: Colorado

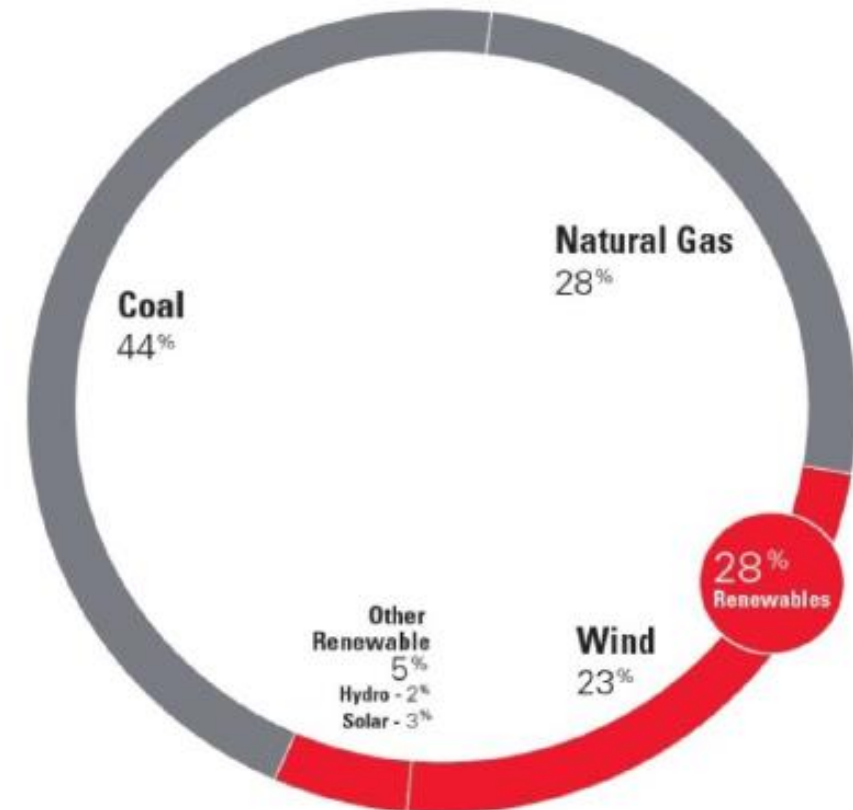
- Rectangle
- Fossil-fuel producing state
- Two vertically integrated investor-owned utilities subject to full regulation
- Largest: Xcel Energy a/k/a Public Service Company of Colorado
- Our Electric Resource Planning Process
  - Phase I / Phase II
  - Focus on Competitive Solicitation
  - Finality, specific bids approved



# Xcel's 2016 Electric Resource Plan

- Anticipation going in...
  - Modest resource need,
  - Add some renewables,
  - Try to avoid new gas build,
  - Lay foundation for coal retirements in 2020
- Dispute about evaluating existing resources within the ERP
- \$0/ton assumed carbon cost, with non-zero sensitivities, including Social Cost of Carbon
- Ongoing discussions: how to reduce GHGs consistent with the science?

2017 Colorado Energy Mix



# The Stipulation

## Key Terms:

- Early Retirement of Comanche Units 1 & 2
- Commitment that plan will “be neutral or result in savings for customers”
- Robust consideration of costs
- Replacement resource ownership targets
  - 50% of renewables
  - 75% of “dispatchable and semi-dispatchable”
- Identified possible resource need of up to 1,100 MW



Diverse support: utility, large customers, consumer advocate, labor organizations, conservation groups, IPP developers, etc.

# After filing the Stipulation...

- Commission consideration
  - Need to update any modelling inputs or assumptions?
  - Required presentation of “least cost” Colorado Energy Plan portfolio
- RFP conducted – massive response

## BUSINESS

### Xcel Energy receives shockingly low bids for Colorado electricity from renewable sources

Solar and wind generation with storage now competitive with coal power



UTILITY DIVE

BRIEF

### Xcel solicitation returns 'incredible' renewable energy, storage bids

Robert Walton

By

Published Jan. 8, 2018

This is a file photo of Xcel Energy employees working on a utility pole on Stanford Avenue in Englewood.

By ALDO SVALDI | asvaldi@denverpost.com | The Denver Post

PUBLISHED: January 16, 2018 at 8:13 pm | UPDATED: February 1, 2018 at 3:13 pm

## In Colorado, a glimpse of renewable energy's insanely cheap future

Even with storage, new renewables beat existing coal.

By David Roberts | @drvox | david@vox.com | Jan 16, 2018, 2:00pm EST

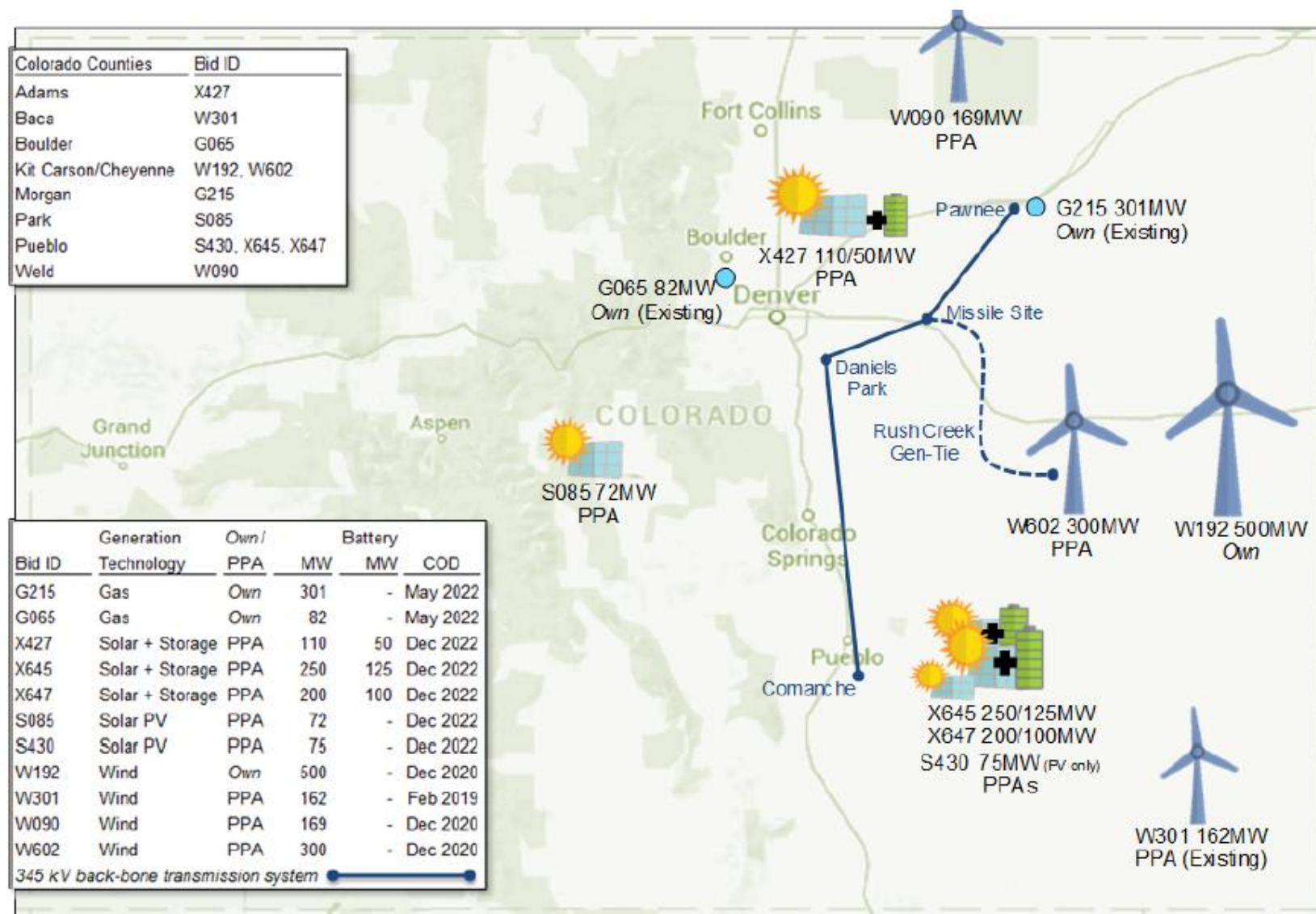


# The Approved Colorado Energy Plan

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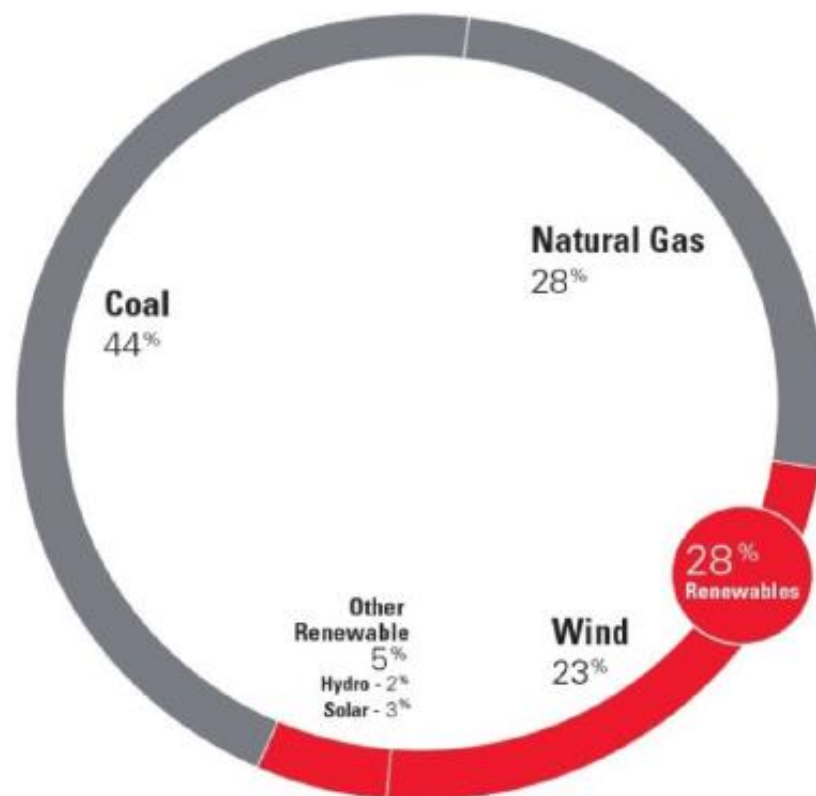
- Resource mix:
  - 1,131 MW wind
  - 707 MW solar
  - 275 MW battery storage
  - 383 MW *existing* gas plants (off-contract)
- Ownership:
  - 58% dispatchable/semi-dispatchable utility-owned
  - 27% renewables utility-owned
- Saves \$213 million PVRR compared to keeping Comanche Units 1 & 2 running.
- When accounting for the societal costs of GHG pollution, the benefits of the CEP are over \$1 billion.
- Significant replacement resources located in Pueblo County (525 MW solar + 225 MW storage), resulting in net tax base benefit to the county.
- Approved in September 2018.

# Replacement Resources at a Glance

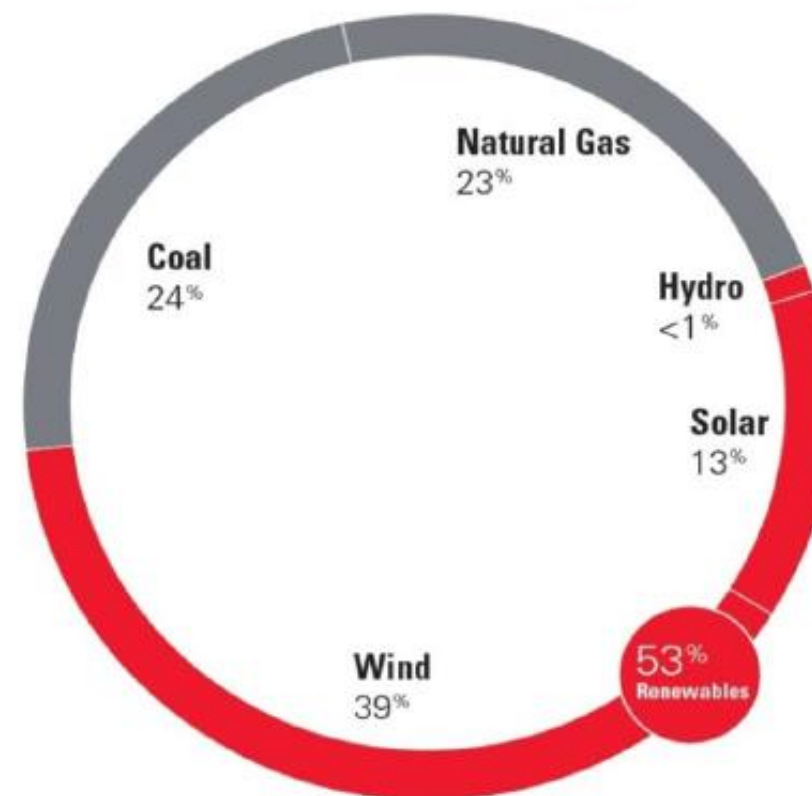


# System Transformation

2017 Colorado Energy Mix



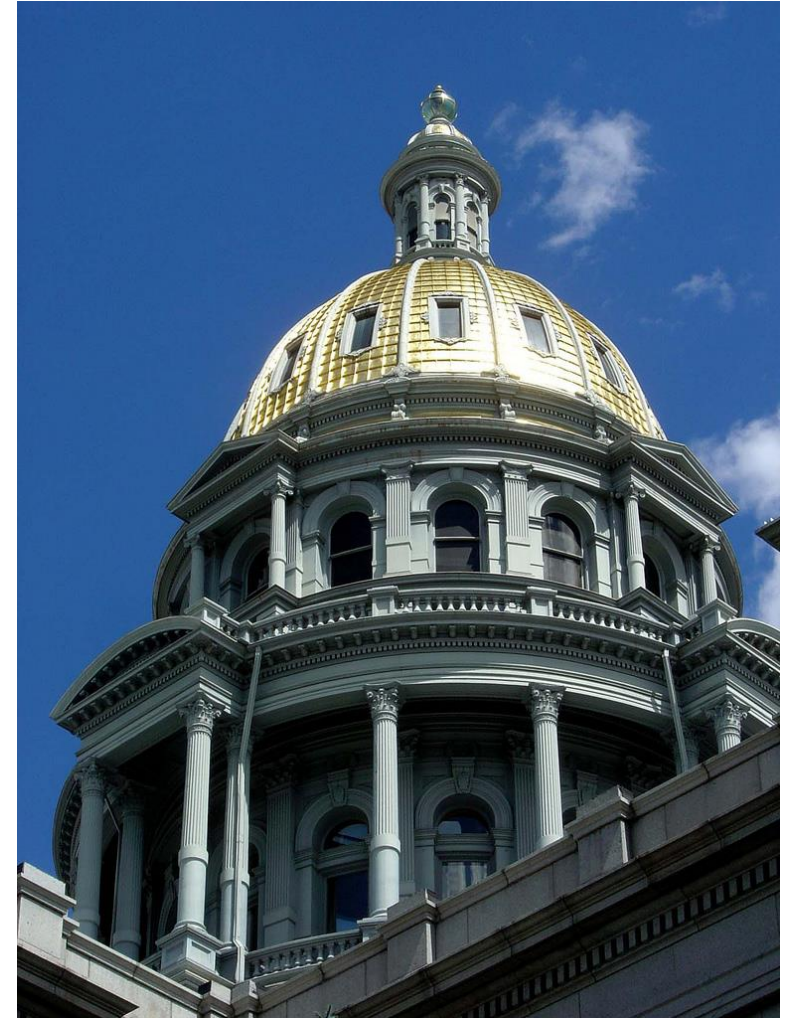
2026 Estimated Energy Mix  
Under The Colorado Energy Plan





## Since the Colorado Energy Plan...

- **In December 2018**, Xcel announced a goal to reduce its system-wide carbon pollution 80% by 2030, with a goal of carbon neutrality by 2050.
- **In February 2019**, PUC proposed new rules to require evaluation of existing plants in every ERP
- **As I type this**, Colorado General Assembly is considering legislation that would set economy-wide GHG reduction goals of 50% by 2030 and 90% by 2050; as well as companion legislation that would create a pathway at the PUC for Xcel (and other electric utilities) to reduce emissions even further, consistent with Xcel's announced goals.





# Any Questions?

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